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10/602,503	06/24/2003	Maurizio Gazzola	CISCP819	2174

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EXAMINER	
LIU, LI	

ART UNIT	PAPER NUMBER
2613	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/602,503	GAZZOLA ET AL.	
	Examiner	Art Unit	
	Li Liu	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/09/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

(1) page 11, line 21, "**N**CO 202" should be changed to "**V**CO 202".

(2) page 13, line 12, "processor **21**6" should be changed to "processor **12**6".

Appropriate correction is required.

Claim Objections

2. Claim 20 is objected to because of the following informalities: in claim 20, line 1, "The apparatus of claim **11**" should be changed to "The apparatus of claim **19**".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 2, 3, 11, 19 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Cho et al (US 2003/0016423).

(1) With regard to claim 1, Cho et al disclose a method of operating an optical receiver system (Figure 2), said method comprising:

receiving an optical signal (200 in Figure 2);

converting said optical signal to an electrical signal (200 in Figure 2, [0028]);

automatically identifying a clock rate of said electrical signal ([0012], Figure 6 [0037]-[0042]; and

using said identified clock rate to select a signal type of said optical signal from a set of possible signal types (controller 350 determines the bit rate based on a look-up table, [0042]).

(2) With regard to claim 2, Cho et al disclose wherein automatically identifying said clock rate comprises:

attempting to lock to a bit clock of said electrical signal using a plurality of clock rates ([0017], a set of bit rate is stored in a memory);

upon achieving lock, determining a current one of said plurality of clock rates to be said identified clock rate ([0042]).

(3) With regard to claim 3, Cho et al disclose wherein automatically identifying said clock rate comprises:

evaluating a frequency difference (390 in Figure 6, the comparator compares the frequency between the input electrical signal with the reference clock signal, [0039]) between a bit clock recovered from said signal and a reference clock;

determining said identified clock rate based on said difference ([0041] and [0042]).

(4) With regard to claim 11, Cho et al disclose an apparatus (Figure 2) for operating an optical receiver system, said apparatus comprising:

a clock recovery block (370 in Figure 2, and Figure 6) that recovers a clock signal from a received optical signal; and

a control processor (350 in Figue 2) that directs said clock recovery block to attempt to lock to said optical signal using a plurality of clock rates ([0017], a set of bit rate is stored in a memory), and that upon achieving lock using a clock rate matching that of said optical signal, employs said matching clock rate to determine a signal type of said optical signal ([0042]).

(5) With regard to claim 19, Cho et al disclose apparatus for operating an optical. receiver system (Figure 2), said apparatus comprising:

a clock recovery block (370 in Figure 2, and Figure 6) that receives a clock signal from a received optical signal and measures a difference of rate between said clock signal and a reference clock (390 in Figure 6, the comparator compares the frequency between the input electrical signal with the reference clock signal, [0039]); and

a control processor (350 in Figure 2) that, based on said difference of rate, determines a signal type of said received optical signal ([0041] and [0042]).

(6) With regard to claim 27, Cho et al disclose an apparatus for operating an optical receiver system, said apparatus comprising:

means for receiving an optical signal (200 in Figure 2);

means for converting said optical signal to an electrical signal (200 in Figure 2, [0028]);

means for automatically identifying a clock rate of said electrical signal ([0012], Figure 6, [0037]-[0042]); and

means for using said identified clock rate to select a signal type of said optical signal from a set of possible signal types (controller 350 determines the bit rate based on a look-up table, [0042]).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 6-10, 14-18 and 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cho et al (US 2003/0016423).

(1) With regard to claims 6-10, Cho et al discloses all of the subject matter as in claim 1. And Cho et al also discloses that the bit-independent receiver can automatically detects that data rate of an input signal, including 1.25 Gb/s and 2.488 Gb/s etc ([0005]). Cho et al also disclose that the receiver is capable of providing a wider range of bit rates of the optical signals recognizable in an optical communications system ([0011]).

But Cho et al does not explicitly disclose that the bit-independent receiver can detects the SONET OC-192, SDH STM-64, 10.325 Gbps, 10.709 Gbps and 11.090 Gbps *etc* optical signal.

Official notice is taken that it was well known in the art at the time the invention was made to enable optical communications systems to communicate using SONET

OC-192, SDH STM-64, 10.325 Gbps,10.709 Gbps and 11.090 Gbps optical communication signals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the bit-independent receiver of Cho et al to automatically detect SONET OC-192, SDH STM-64, 10.325 Gbps,10.709 Gbps and 11.090 Gbps optical communication signals in order to enable the system of Cho et al to detect the optical communication signals which were commonly used at the time of the invention was made and therefore, increasing the number of recognizable signals detectable by the bit-independent receiver of Cho et al.

(2) With regard to claims 14-18, Cho et al discloses all of the subject matter as in claim 11. And Cho et al also discloses that the bit-independent receiver can automatically detects that data rate of an input signal, including 1.25 Gb/s and 2.488 Gb/s etc ([0005]). Cho et al also disclose that the receiver is capable of providing a wider range of bit rates of the optical signals recognizable in an optical communications system ([0011]).

But Cho et al does not explicitly disclose that the bit-independent receiver can detects the SONET OC-192, SDH STM-64, 10.325 Gbps, 10.709 Gbps and 11.090 Gbps *etc* optical signal.

Official notice is taken that it was well known in the art at the time the invention was made to enable optical communications systems to communicate using SONET OC-192, SDH STM-64, 10.325 Gbps,10.709 Gbps and 11.090 Gbps optical communication signals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the bit-independent receiver of Cho et al to automatically detect SONET OC-192, SDH STM-64, 10.325 Gbps,10.709 Gbps and 11.090 Gbps optical communication signals in order to enable the system of Cho et al to detect the optical communication signals which were commonly used at the time of the invention was made and therefore, increasing the number of recognizable signals detectable by the bit-independent receiver of Cho et al.

(3) With regard to claims 22-26, Cho et al discloses all of the subject matter as in claim 19. And Cho et al also discloses that the bit-independent receiver can automatically detects that data rate of an input signal, including 1.25 Gb/s and 2.488 Gb/s etc ([0005]). Cho et al also disclose that the receiver is capable of providing a wider range of bit rates of the optical signals recognizable in an optical communications system ([0011]).

But Cho et al do not explicitly disclose that the bit-independent receiver can detects the SONET OC-192, SDH STM-64, 10.325 Gbps, 10.709 Gbps and 11.090 Gbps *etc* optical signal.

Official notice is taken that it was well known in the art at the time the invention was made to enable optical communications systems to communicate using SONET OC-192, SDH STM-64, 10.325 Gbps,10.709 Gbps and 11.090 Gbps optical communication signals.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the bit-independent receiver of Cho et al to

automatically detect SONET OC-192, SDH STM-64, 10.325 Gbps,10.709 Gbps and 11.090 Gbps optical communication signals in order to enable the system of Cho et al to detect the optical communication signals which were commonly used at the time of the invention was made and therefore, increasing the number of recognizable signals detectable by the bit-independent receiver of Cho et al.

7. Claims 4, 5, 12, 13, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cho et al (US 2003/0016423) in view of Marmur (US 6,466,886)

(1) With regard to claim 4, Cho et al discloses all of the subject matter as in claim 1. But Cho et al does not explicitly disclose that the method further comprises, based on said signal type, selecting a traffic processing block to further process said electrical signal.

However, Marmur, in the same field of endeavor, discloses a method which selects a traffic processing block to further process said electrical signal based on said signal type (19, 21, 14 and 23 in Figure 1 and Figure 2, since the demodulator DE-MUX has a plural of outputs the FEC and Performance Monitor 19 can be interpreted to have several traffic blocks inside, and control module FPGA 31 in Figure 2 control the traffic process, performance monitor and the further process of the identified signal, and the E/O transmitter module 23 regenerates the output optical signal based on the identified signal types).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the system taught by Marmur to the system of

Cho et al so that the optical transponder is capable of effectively processing different signal types, and facilitating inventory reduction.

(2) With regard to claim 5, Cho et al discloses all of the subject matter as in claim 1. But Cho et al does not explicitly teach that the method, based on said signal type, selects a performance monitoring method to monitor quality of said optical signal.

However, Marmur, in the same field of endeavor, disclose a method which selects a performance monitoring method based on said signal type (performance monitoring PM 19 in Figure 1 and Figure 2, column 1 line 26-56, column 3 line 47-56) to monitor quality of said optical signal.

Optical performance monitoring is essential for managing high capacity optical transmission and switching system. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the system taught by Marmur with the system of Cho et al so that the optical transponder is capable of effecting performance monitoring on the identified signal type and further increasing the deployment flexibility, and different signal rate can be better processed and further be transmitted.

(3) With regard to claim 12, Cho et al discloses all of the subject matter as in claim 1. But Cho et al does not explicitly disclose wherein said control processor, based on said signal type, selects a traffic processing block to further process said electrical signal.

However, Marmur, in the same field of endeavor, discloses a control processor which selects a traffic processing block to further process said electrical signal based on

said signal type (19, 21, 14 and 23 in Figure 1 and Figure 2, since the demodulator DE-MUX has a plural of outputs the FEC and Performance Monitor 19 can be interpreted to have several traffic blocks inside, and control module FPGA 31 in Figure 2 control the traffic process, performance monitor and the further process of the identified signal, and the E/O transmitter module 23 regenerates the output optical signal based on the identified signal types).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the control processor taught by Marmur to the apparatus of Cho et al so that the optical transponder is capable of effectively processing different signal types, and facilitating inventory reduction.

(4) With regard to claim 13, Cho et al discloses all of the subject matter as in claim 1. But Cho et al does not explicitly teach wherein said control processor, based on said signal type, selects a performance monitoring block to monitor quality of said optical signal.

However, Marmur, in the same field of endeavor, discloses a method which selects a performance monitoring method based on said signal type (performance monitoring PM 19 in Figure 1 and Figure 2, column 1 line 26-56, column 3 line 47-56) to monitor quality of said optical signal.

Optical performance monitoring is essential for managing high capacity optical transmission and switching system. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the performance monitoring taught by Marmur with the apparatus of Cho et al so that the optical

transponder is capable of effecting performance monitoring on the identified signal type and further increasing the deployment flexibility, and different signal rate can be better processed and further be transmitted.

(5) With regard to claim 20, Cho et al discloses all of the subject matter as in claim 1. But Cho et al does not explicitly disclose wherein said control processor, based on said signal type, selects a traffic processing block to further process said electrical signal.

However, Marmur, in the same field of endeavor, discloses a control processor which selects a traffic processing block to further process said electrical signal based on said signal type (19, 21, 14 and 23 in Figure 1 and Figure 2, since the demodulator DE-MUX has a plural of outputs the FEC and Performance Monitor 19 can be interpreted to have several traffic blocks inside, and control module FPGA 31 in Figure 2 control the traffic process, performance monitor and the further process of the identified signal, and the E/O transmitter module 23 regenerates the output optical signal based on the identified signal types).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the control processor taught by Marmur to the apparatus of Cho et al so that the optical transponder is capable of effectively processing different signal types, and facilitating inventory reduction.

(6) With regard to claim 21, Cho et al discloses all of the subject matter as in claim 19. But Cho et al does not explicitly teach wherein said control processor, based

on said signal type, selects a performance monitoring block to monitor quality of said optical signal.

However, Marmur, in the same field of endeavor, disclose a method which selects a performance monitoring method based on said signal type (performance monitoring PM 19 in Figure 1 and Figure 2, column 1 line 26-56, column 3 line 47-56) to monitor quality of said optical signal.

Optical performance monitoring is essential for managing high capacity optical transmission and switching system. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the performance monitoring taught by Marmur with the apparatus of Cho et al so that the optical transponder is capable of effecting performance monitoring on the identified signal type and further increasing the deployment flexibility, and different signal rate can be better processed and further be transmitted.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Scheytt et al discloses a 0.155-, 0.622-, and 2.488-Gb/s automatic bit-rate selecting clock and data recovery IC for bit-rate transparent SDH systems. The authors claim "The circuit represents the first automatic frequency selecting CDR IC for SDH/SONET systems". (IEEE Journal of Solid-State Circuits, Vol. 34, No. 12, December 1999, page 1935-1943)

Cho et al (US 7,050,463) discloses an automatic bit-rate detection scheme for use on SONET transceiver.

Doh et al (US 6,684,033) discloses a bit rate detection circuit and algorithm for optical networks.

Earnest (US 5,982,837) discloses an automatic baud rate detector.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Li Liu whose telephone number is (571)270-1084. The examiner can normally be reached on Mon-Fri, 7:30 am - 5:00 pm, alternating Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on (571)272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Li Liu, July 12, 2006

SHUWANG LIU
SUPERVISORY PATENT EXAMINER